

REMARKS

Claims 1-35 are now pending in the application, with claims 1, 31 and 32 being the independent claims. Reconsideration and further examination are respectfully requested.

§ 101 Rejection

In the Office Action, claims 1-30 are rejected under 35 USC § 101 as allegedly being directed to non-statutory subject matter. Specifically, the Office Action asserts that the invention recited in such claims does not fall within the "technological arts". Applicants believe that the case law interpreting § 101 only requires an invention to be "useful" in the sense that it has some practical or real-world application and does not require any showing that the invention falls within the "technological arts". Nevertheless, Applicants have amended the subject claims as indicated by the Examiner in order to obtain early allowance of this case.

Specifically, in order to overcome the present rejection, the subject claims have been amended above to recite the use of a computer to execute computer-executable process steps for performing certain of the steps that previously were recited as direct method steps. The recitation of a computer in these claims is intended only to exclude from the scope of such claims any method where the subject steps are performed mentally, and is not intended to limit the claims to any particular type of computer (e.g., electronic, optical, biological, chemical, etc.), whether now existing or hereafter developed. Steps not recited as being performed by a computer may be performed either by a computer or manually.

By requiring the subject steps to be performed by a computer, the above claim amendments are believed to eliminate any argument that the present claims do not recite statutory subject matter. That is, the present claims recite a method utilizing a computer, which clearly is within the technological arts. Accordingly, withdrawal of the present § 101 rejection is respectfully requested.

Prior Art Rejections

In the Office Action, claims 1-19 and 21-32 were rejected under 35 USC § 102(e) over U.S. Patent 6,681,211 (Gatto); and claim 20 was rejected under § 103(a) over Gatto. Withdrawal of these rejections is respectfully requested for the following reasons.

The present invention concerns improved techniques for forecasting the direction in which the price of an asset will move. In one aspect, the invention involves: (i) identifying a set of predictor variables that are likely to influence observed prices of an asset; (ii) generating a prediction formula based on historical values for the predictor variables and the asset value; (iii) determining how similar or dissimilar the actual asset value is to the predicted value; and then (iv) forecasting a direction in which the asset price will move based on the similarity measure.

Because the predictor variables preferably are only capable of reflecting information that is not specific to the subject asset, in the preferred embodiments the determined similarity measure will provide a good indication of how the market has responded to changes in asset-specific information. Based on this information, an investor often will be able to determine whether the market has responded appropriately and, correspondingly, whether the asset appears to be over-valued or under-valued.

Independent claims 1, 31 and 32 are directed to techniques for forecasting the direction in which the price of an asset (e.g., a share of stock) will move. Initially, a group of exogenous variables (e.g., interest rate, unemployment rate, commodity price) that are likely to influence observed prices of the asset is identified (e.g., using stepwise regression or a statistical clustering technique). Historical data for values of such exogenous variables and historical data for the observed prices of the asset over a period of time are processed to obtain a formula for calculating price estimates for the asset as a function of the exogenous variables (e.g., using a statistical regression technique or a neural network technique).

The formula is then calculated using an input set of observed values for the exogenous variables at a given point in time, so as to obtain a price estimate for the asset at such given point in time. Next, a similarity measure is determined by comparing the price estimate for the asset at the given point in time to the observed price for the asset at the same given point in time (e.g., using a difference ratio). Finally, a direction in which the observed price of the asset will move is forecast based on the determined similarity measure.

The foregoing combination of features is not disclosed by the applied art. In fact, Gatto does not disclose many of the features or limitations recited in the independent claims. This is because Gatto uses an entirely different approach than that of the present invention.

As noted above, the present invention provides an indication as to whether a given asset price will move up or down, typically by comparing an actually observed asset price to what would have been predicted based on a group of exogenous

variables that are likely to influence the observed price of the asset. Gatto, on the other hand, provides a computer-implemented tool that assists a user in evaluating the performances of security analysts and in determining an optimal combination of analysts' estimates.

In other words, other than rating security analysts (which is completely unrelated to the present invention), Gatto is solely concerned with facilitating an improved forecast of the future value of some quantity related to an identified security. In contrast, as will become apparent below, the present invention primarily is concerned with how the market currently is pricing an asset and, in particular, focuses on the component of the asset's market price that results after separating out the influences caused by factors that are reflected in selected exogenous variables.

In the Office Action, it is asserted that the presently recited exogenous variables read on the factors selected by a user in creating one of Gatto's models. As described in Gatto at column 19 lines 24-29, those factors include: accuracy, all-star rating, broker list, experience, estimate age, and other factors, attributes or performance metrics. It is noted that all of Gatto's factors concern the individual analyst or the analyst's estimate(s).

Even assuming, for the sake of argument, that the presently recited exogenous variables do in fact read on Gatto's factors identified above, it becomes immediately apparent that many of the limitations of the independent claims are missing from Gatto.

For example, contrary to a reading of the present claims, Gatto's factors are not processed by a computer, a computer-executable process step, or any other external means for that matter, in order to obtain a formula for calculating price estimates for an

asset as a function of such factors. Rather, as explained in column 19, Gatto's factors, as well as the N-scores and weights assigned to such factors, are simply selected by the user, in the user's own discretion, in order to create a model that will be used to produce a (hopefully optimal) combination of the analysts' forecasts. Thus, even if Gatto's model can be said to be equivalent to a formula, as recited in the present claims, the way in which Gatto's model is created is entirely different than the way in which the recited formula is obtained in the present invention.

Column 11 lines 10-52 of Gatto was cited in the Office Action as showing the above-referenced feature of the invention. However, that portion of Gatto has been reviewed in detail and merely describes an aspect of Gatto's software tool that permits a user to view historical data over a selected period of time. It does not appear to say anything at all about processing historical data to obtain any kind of formula.

Also, the present claims recite that the obtained formula is calculated using an input set of observed values for the exogenous variables at a given point in time so as to obtain a price estimate for the asset at the same given point in time. It appears that the only time that Gatto performs such a calculation is for purposes of "backtesting" the validity of a proposed model. See, e.g., column 8 line 54; column 17 lines 13-16; and column 24 lines 28-40. As discussed in these portions of Gatto, such "backtesting" is simply used to refine the models being tested.

In contrast, the calculated result is used in the present invention to obtain a similarity measure (by comparing the calculated result to the observed asset price at the same given point in time), which is then used to forecast a direction in which the observed price of the asset will move. That is, the calculated result and resulting

comparison are used in the present invention for purposes of actually generating a forecast, rather than just for a testing a model.

On the other hand, when Gatto wants to forecast a quantity, the user simply directly applies a "production" model to current analysts' forecasts in order to produce a combined forecast. Gatto's actual forecasting apparently does not rely upon any comparison or similarity measure, as recited in the present claims.

In short, while Gatto's "backtesting" utilizes a calculation which may be similar in some respects to the presently recited calculation, the results of Gatto's calculation are used for an entirely different purpose than the results of the calculation in the present claims.

Based on these significant differences between Gatto and the present claims, independent claims 1, 31 and 32 could not possibly have been anticipated by Gatto. The other pending claims depend from these independent claims and are therefore believed to be allowable for at least the same reasons.

In addition, each such dependent claim recites an additional feature of the invention that further distinguishes the invention from the applied art. Accordingly, the individual consideration/reconsideration of each on its own merits is respectfully requested.

For instance, dependent claim 2 recites the further feature that the asset is a stock issued by a company doing business in a particular industry, and a substantial number of the exogenous variables reflect prices of stocks issued by other companies that are also doing business in said particular industry. In the Office Action, it is asserted that the exogenous variables reflect prices of stocks issued by other

companies that are also doing business in the same industry as the company represented by the subject asset. However, such an assertion is believed to be inconsistent with the arguments made in connection with the rejection of independent claim 1. There, it is asserted in the Office Action that the exogenous variables of the present claims read on Gatto's analyst factors (which are selected by a user in creating a model). In addition, while portions of Gatto cited in connection with the present rejection generally refer to sets of stocks, there is no indication that such stocks are used in the same manner as are the exogenous variables recited in independent claim 1.

Similarly, dependent claim 3 recites the further limitation that the exogenous variables include macroeconomic variables. The assertion in the Office Action that the exogenous variables include macroeconomic variables is believed to be inconsistent with the arguments made in connection with the rejection of independent claim 1. There, it is asserted in the Office Action that the exogenous variables of the present claims read on Gatto's analyst factors (which are selected by a user in creating a model). Also, there is no indication in the portions of Gatto cited in connection with the present rejection that macroeconomic variables are used in the same manner as are the exogenous variables recited in independent claim 1.

Dependent claim 4 recites that at least some of the exogenous variables are identified by performing stepwise regression over a number of potential exogenous variables and selecting the potential exogenous variables that provide the best fit. The Office Action cites column 22 lines 34-52 of Gatto as showing this feature of the

invention. However, that portion of Gatto has been reviewed in detail and is not seen to say anything at all about performing a stepwise regression.

Dependent claim 6 recites that at least some of the exogenous variables are identified by performing a statistical clustering technique. The Office Action cites column 20 lines 8-46 of Gatto as showing this feature of the invention. While that portion of Gatto does mention clustering, Gatto's clusters are defined by characteristics which are set by the user. Nothing in that or any other portion of Gatto appears to mention statistical clustering.

Newly added dependent claims 33-35 recite the additional feature that the forecasting based on the similarity measure is performed by evaluating the similarity measure as a measurement of changes due to factors that are not accounted for by the exogenous variables. This feature has been newly added to the claims and therefore previously has not been considered by the Examiner. It is supported, e.g., in the Specification at page 4 lines 3-11. The applied art has been reviewed in detail and is not seen to disclose or to suggest this additional feature of the invention.

As noted above, the other dependent claims recite additional features of the invention that are believed to be novel and non-obvious in view of the applied art. However, for the sake of brevity, Applicants have not pointed out each such feature. It is believed that the differences between the present invention and the applied art should be clear when the claims are reconsidered in view of the foregoing remarks.

Conclusion

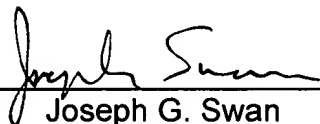
Based on the differences between the present invention and the applied art, highlighted above, the entire application is believed to be in condition for allowance. Accordingly, an indication to that effect is respectfully requested.

If there are any fees due in connection with the filing of this paper that have not been accounted for in this paper or the accompanying papers, please charge the fees to our Deposit Account No. 13-3735. If an extension of time under 37 C.F.R. 1.136 is required for the filing of this paper and is not accounted for in this paper or the accompanying papers, such an extension is requested and the fee (or any underpayment thereof) should also be charged to our Deposit Account No. 13-3735. A duplicate copy of this page is enclosed for that purpose.

Respectfully submitted,

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